

ARO-FE Executive Bulletin

May 15 - August 15, 2000



The following are **SOME** of the ARO-FE **highlights**:

Important Visitors:

USA: - Dr. C. I. (Jim) Chang, Director ARO & Dpt. Director for Basic Science at the Army Research Lab (ARL).
- Dr. Fred E. Saalfeld, Executive Director/Technical Director Office of Naval Research.

Thailand: LTG. Chaisuk Getuthat, Director General of Defence R&D Office; MG. Chayasit Linthong, Technical Specialist, Defence Research and Development Office, Ministry of Defence; COL. Charnarong Wongsutad, Deputy Director of Promotion Division, Defence R&D Office.

Support to DOD Labs

Japan:

1. The National Institute for Research in Inorganic Materials (NIRIM), Stanford University and ARO-FE have just agreed to work on a research project to investigate "Periodically Poled Lithium Niobate for Photonic and Telecommunication Applications". This research can result in an important break-through in laser beam shaping, phase conjugation, laser beam amplification and optical data storage.

2. Tokyo University of Agriculture and Technology and ARO-FE met and identified the following areas of information exchange and collaboration. Interested DOD personnel are encouraged to contact ARO-FE for further information. Opportunity areas relevant to DOD: a. Piezoelectric Polymers for Ultrasonic Actuators and Sensors. b. Utilization of Super Critical CO₂ for Preparation of New Membrane Films and Fluoro Fibers. c. Electroluminescent of Novel Organic Materials and Devices. d. Control of Refractive Index of Polymers for Optical Devices, Micro Lenses, GI Optical Fibers, Multiplexers and Demultiplexers. e. Nonlinear Optics of Nematic and Cholesteric Liquid Crystals. f. Organic Photorefractive Materials for Photographic Data Storage. g. Synthesis of Photoconducting Polymeric Spheres with Uniform Size for Two-Dimensional Array.

Singapore: ARO-FE has just approved the International Conference on Materials for Advanced Technologies; it will consist of 16 different Symposia. Representatives from "interested" DOD labs will attend. These Symposia play a crucial role in the energy sector, communication, information storage, food, health, environment, etc. Industries like microelectronics, chemical, petrochemical, etc. depend on the performance of 'functional materials', which possess specific physical and chemical properties. Discoveries made in the last decade have seen enormous growth and potential in the functional materials for exploitation in various devices. Semiconductor blue-lasers, organic light-emitting diodes, quantum-dot structures and nano-particles, high-temperature superconductors, biosensors, rechargeable batteries and fuel-cells are well known examples.

Thailand: As a result of Dr. Chang's visit, LTG Chaisuk Getuthat (also a Ph.D.) visited ARO-FE in Tokyo. During the many discussions and interactions it was clear that the Thailand is very interested in potential collaboration with DOD. An area of particular discussion was the investigation of the physical, chemical and biological systems of the Gulf of Thailand. He invited ARO-FE and ONRIFO-Asia to visit Thailand, possibly November 2000, for further discussions on the "Gulf" and other potential technical collaborations.

Conference Support

- Functionally Graded Materials in the 21st Century, Japan/ Dr. Hidehiko Kido
- Mesomechanics for Development of Science and Technology, China/ Dr. G. D'Andrea & Dr. J. Stellato*
- Photonics Taiwan 2000, Taiwan/ Dr. L. Galambos of Stanford University*
- Laser Precision Macro-fabrication, Japan / Prof. F. Ling, University of Texas at Austin
- Dynamical Systems, Hawaii / Dr. G. Kovacic, Rensselaer Polytechnic Institute & Dr. D'Andrea
- Environmental Quality Technology, Williamsburg, VA / Dr. G. D'Andrea

PLEASE NOTE:

* Table of Contents and Abstracts are now available on our Web Page

1. More information on above highlights and other technical material can be obtained from:

- **ARO-FE Web Page:** <http://204.34.2.153/index.html>. or by clicking on the ARO button of Desktop News.
- **Desktop News (DTN):** <http://www.desktopnews.com/download/AroSetup.exe>. An open web and network broadcast platform which displays a tickertape across the top of the computer screen delivering headlines of our activities. It offers an easy and effortless access to the ARO-FE past, present and planned technical activities and it includes hot links to many other Research organizations within DOD. Also, be advised to check into your network security regulations before using" it.
- **Quarterly Report:** The 3rd Quarterly Report is located in the ARO-FE web page: its password is "pacific".
- **Dr. Giuliano D'Andrea:** dandrea@arofe.army.mil, Director ARO-FE.

2. **The Web Page and DTN are new. Your patience and "feedback" are appreciated.**